

LISTING OF CLAIMS:

This listing of claims is provided for the Examiner's convenience:

1. (previously presented) Fused ceramic grains having the following average chemical composition by weight, in percentages by weight on the basis of the oxides:

$\text{Al}_2\text{O}_3$ : 93% to 98.5%;

$\text{MgO}$ : 2.2 to 6.5%;

$\text{SiO}_2$ : < 0.1%;

other impurities: < 0.4%,

the maximum carbon content being 200 ppm.

2. (original) Grains according to claim 1, wherein the minimum  $\text{MgO}$  content, as a percentage by weight on the basis of the oxides, is 2.3%.

3. (original) Grains according to claim 1, wherein the minimum  $\text{MgO}$  content, as a percentage by weight on the basis of the oxides, is 2.45%.

4. (original) Grains according to claim 1, wherein the maximum  $\text{MgO}$  content, as a percentage by weight on the basis of the oxides, is 4%.

5. (original) Grains according to claim 1, wherein the maximum MgO content, as a percentage by weight on the basis of the oxides, is 2.5%.

6-7. (canceled)

8. (original) Grains according to claim 1, wherein the maximum Na<sub>2</sub>O content, as a percentage by weight on the basis of the oxides, is 0.1%, preferably 0.05%.

9. (original) Grains according to claim 1, which consist of corundum crystals surrounded by a nonstoichiometric MgO-Al<sub>2</sub>O<sub>3</sub> spinel phase.

10. (original) Grains according to claim 9, wherein the mean size of said corundum crystals is between 18 and 20  $\mu\text{m}$

11. (previously presented) Grains according to claim 9, wherein 90% of said corundum crystals have a size of greater than 9  $\mu\text{m}$  and 90% have a size of less than 27  $\mu\text{m}$ .

12. (original) Grains according to claim 9, wherein 100% of said corundum crystals have a size of greater than 5  $\mu\text{m}$ .

13. (withdrawn) Process for manufacturing ceramic grains, which comprises the following successive steps:

a) preparation of a mixture of raw materials having the following average chemical composition by weight, as percentages by weight on the basis of the oxides:

$\text{Al}_2\text{O}_3$ : 93% to 97.5%;

$\text{MgO}$ : 2.2 to 6.5%;

$\text{SiO}_2$ : < 0.1%;

other impurities: < 0.4%;

b) fusion, in an electric arc furnace, by means of a short arc and with a melting energy before casting between 2000 and 2500 kWh per ton of said mixture of raw materials, under defined reducing conditions so that the product obtained after the following step c) has a maximum carbon content of 200 ppm;

c) casting and quench cooling;

d) grinding of the cooled product; and

e) screening the ground grains and selecting the screened grains, so that the selected grains have a grit number of F50 or less according to the FEPA Standard 42-GB-1984.

14. (withdrawn) Process according to claim 13, wherein said mixture of raw materials also contains between 0.8 to 5.5 wt% carbon and/or between 0.8 and 5.5 wt% aluminum metal chips.

15. (withdrawn) Process according to claim 13, which includes, after step d), a calcination step in an oxidizing atmosphere at a temperature above 1250°C.

16. (withdrawn) Process according to claim 15, wherein the calcination temperature is above 1350°C.

17. (withdrawn) Process according to claim 15, wherein the calcination temperature is above 1400°C.

18. (withdrawn) Process according to claim 15, wherein the calcination temperature is maintained for a time of at least 5 minutes.

19.-20. (canceled).

21. (withdrawn) An abrasive product comprising the grains according to claim 1.

22. (withdrawn) The abrasive product of claim 21, wherein the abrasive product is a bonded product.

23. (previously presented) Fused ceramic grains according to claim 1, having a grit number of F60 or less according to FEPA Standard 42-GB-1984, and presenting the following size distribution, with test sieves according to ASTM E11-87,

|                                 | Test sieve 1 | Test sieve 2 | Test sieve 3 | Test sieves 3 and 4 | Remainder in the bottom pan |
|---------------------------------|--------------|--------------|--------------|---------------------|-----------------------------|
| aperture size ( $\mu\text{m}$ ) | 425          | 300          | 250          | 212                 |                             |
| Residue (%)                     | 0            | 30 max       | 40 min       | 65 min              | 3 max                       |

24. (previously presented) Fused ceramic grains according to claim 1, having a grit number of F36 or less according to FEPA Standard 42-GB-1984, and presenting the following size distribution, with test sieves according to ASTM E11-87,

|                                 | Test sieve 1 | Test sieve 2 | Test sieve 3 | Test sieves 3 and 4 | Remainder in the bottom pan |
|---------------------------------|--------------|--------------|--------------|---------------------|-----------------------------|
| aperture size ( $\mu\text{m}$ ) | 850          | 600          | 500          | 425                 |                             |
| Residue (%)                     | 0            | 25 max       | 45 min       | 65 min              | 3 max                       |

25. (previously presented) Fused ceramic grains having the following average chemical composition by weight, in percentages by weight on the basis of the oxides:

$\text{Al}_2\text{O}_3$ : 93% to 98.5%;

$\text{MgO}$ : 2.2 to 6.5%;

$\text{SiO}_2$ : < 0.1%;

other impurities: < 0.4%,

the maximum carbon content being 200 ppm,

said grains comprising corundum crystals, 90% of which having a size of less than 27  $\mu\text{m}$ .